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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/729,178	MAY, GREGORY J.	
	Examiner	Art Unit	
	Michael Pervan	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 40-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 40, it recites in lines 5 and 6, "rows of the conductors and insulation are arranged to provide power and ground". It is not possible for conductors to provide both power and ground; the same goes for insulation. Therefore, it is difficult to ascertain what exactly is being claimed.

In regards to claims 41-42, since they depend off of claim 40, they are rejected for the same reason as stated for claim 40.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 11, 19-20, 22-27 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al (US 6,542,138) in view of Yoksza et al (US 5,410,328).

In regards to claim 1, Shannon discloses an optically addressable pixel, comprising:

an emission sensor (Fig. 3 and col. 8, lines 1-7; emission sensors (photodiode 38);

a filter disposed to filter emissions directed toward said emission sensor (col. 8, lines 12-13; the emission senor (photodiode) is shielded (filtered) from ambient light);

an emission device responsive to said emission sensor (col. 8, lines 31-43).

Shannon does not disclose a frame configured to hold said emission sensor said emission device and said filter, and to pass electric current to said emission device when an outer surface of said frame is brought into contact with a powered conductor.

Yoksza discloses an emission device responsive to said emission sensor (col. 3, line 65-col. 4, line 16) and a frame configured to hold said emission sensor; said emission device and said filter (col. 2, line 62-col. 3, line 27), and to pass electric current to said emission device when an outer surface of said frame is brought into contact with a powered conductor (electrical jack 42) (col. 3, line 65-col. 4, line 22).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, module to hold an emission device and pass electric current to emission device when an outer surface of said module is brought into contact with a powered conductor, by incorporate the teachings of Yoksza into the device of Shannon because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 2, Shannon and Yoksza do not disclose the pixel according to claim 1, wherein said filter emission sensor receives emissions on one side of the pixel and said emission device produces a display on the one side.

However, since no benefit or advantage is described in the specification, the examiner believes this to be a designer's choice.

In regards to claim 3, Shannon and Yoksza do not disclose the pixel according to claim 2, wherein said emission sensor is held adjacent to said emission device by said frame on the one side.

However, since no benefit or advantage is described in the specification, the examiner believes this to be a designer's choice.

In regards to claim 4, Shannon discloses the pixel according to claim 1, said filter receives emissions on one side of said pixel (Fig. 3 and col. 8, lines 12-13; the light passes through the filter (shielding) and onto the emission sensors (photodiode), which then sends a signal to the emission device (display element 20)).

Shannon does not disclose said emission device produces a display on an opposite side of said pixel.

Yoksza discloses said emission device produces a display on an opposite side of said pixel (Figs. 2a, 2b, 3b and col. 2, lines 62-67; as seen in the drawings the emission devices (LEDs) are positioned to produce a display on one side of the frame (LED module)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, LEDs positioned to produce a display on one side of the frame, by

incorporating emission sensors and filters of Shannon into the receptacle array and frame of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 5, Shannon does not disclose the pixel according to claim 1, comprising a plurality of respective emission sensors, filters and emission devices held in said frame.

However, Shannon and Yoksza disclose an emission sensor (photodiode 38), filter (shielding) and emission device (display element 20) (col. 7, line 56-col. 8, line 12) held in said frame (Yoksza; col. 2, line 62-col. 3, line 27).

Since, there is no benefit or advantage described in the specification for having more than one emission sensor, filter and emission device, the examiner believes this to be a designer's choice.

In regards to claim 11, Shannon does not disclose a receptacle array, comprising a pixel of claim 1, inserted into a receptacle array, the receptacle array including a plurality of receptacles shaped to accommodate pixels, each of said receptacles making electrical contact with the frame of an inserted pixel.

Yoksza discloses a receptacle array, comprising a pixel of claim 1, inserted into a receptacle array, the receptacle array including a plurality of receptacles (Fig. 3b) shaped to accommodate pixels (Fig. 3b; since pixels are held in the frame (LED module) which are connected to the face of the display, the receptacles must accommodate the pixels), each of said receptacles making electrical contact with the

frame of an inserted pixel (col. 3, line 65–col. 4, power is provided via the electrical jack, which is part of the receptacle, to the frame (LED module)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, receptacle array shaped to accommodate pixels and making electrical contact with frame of inserted pixels, by incorporating the pixels of Shannon into the receptacle array of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 19, Shannon discloses a pixel for an optically addressed display, comprising:

for each of the plural colors an emission sensor that responds to emissions by activating an emission device or emission devices of one or more of the plural colors (col. 8, lines 1-12, 21-43).

Shannon does not disclose a frame shaped to fit into a corresponding receptacle and emission devices of plural colors held within the frame to make electrical contact with a power circuit when the frame is inserted into a corresponding receptacle.

Yoksza discloses a frame shaped to fit into a corresponding receptacle (Fig. 3b; each frame (LED module) fits into a receptacle of the receptacle array) and emission devices of plural colors (col. 2, lines 62-67; since the frame (LED module) contains LEDs, which can be made to emit many different colors, therefore the frame contains emission devices (LEDs) of plural colors) held within the frame to make electrical contact with a power circuit when the frame is inserted into a corresponding receptacle

(col. 3, line 65-col. 4, line 22; the frame (LED module) makes contact with the power circuit (electrical jack) when it is inserted into the receptacle).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame shaped to fit receptacle, emission devices of plural colors and frame making electrical contact when inserted in receptacle, by incorporating the pixel of Shannon into the receptacle array of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 20, Shannon discloses the pixel of claim 19, further comprising, for each emission sensor corresponding to one or more of the plural colors, a filter that passes a band of emissions different from that of emission sensors corresponding to others of the plural colors (col. 8, lines 1-12).

In regards to claim 22, Shannon discloses the pixel of claim 19, said filters and emission sensors are positioned to receive emissions from an opposite side of the frame (Fig. 3; the light passes through the filters and onto the emission sensors, which then sends a signal to the emission device).

Shannon does not disclose wherein said emission devices comprise LEDs positioned to produce a display on one side of the frame.

Yoksza discloses wherein said emission devices comprise LEDs positioned to produce a display on one side of the frame (Figs. 2a, 2b, 3b and col. 2, lines 62-67; as seen in the drawings the LEDs are positioned to produce a display on one side of the frame (LED module)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, LEDs positioned to produce a display on one side of the frame, by incorporating emission sensors and filters of Shannon into the receptacle array and frame of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 23, Shannon and Yoksza do not disclose the pixel of claim 19, wherein said emission devices comprise LEDs positioned to produce a display on one side of the frame and said filters and emission sensors are positioned to receive emissions from said one side of the frame.

However, since no benefit or advantage is described in the specification, the examiner believes this to be a designer's choice.

In regards to claim 24, Shannon does not disclose the pixel of claim 19, comprising one emission device of each of the plural colors.

Yoksza discloses the pixel of claim 19, comprising one emission device of each of the plural colors (col. 2, lines 62-67; since the frame (LED module) contains emission devices (LEDs), which can be made to emit many different colors, the emission devices of Yoksza would comprise an emission device for each of the plural colors).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with emission devices for plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 25, Shannon does not disclose the pixel of claim 19, comprising a plurality of emission devices of each of the plural colors.

Yoksza discloses the pixel of claim 19, comprising a plurality of emission devices of each of the plural colors (Figs. 2a, 2b, 3b and col. 2, lines 62-67; as can be seen from the drawing each frame (LED module) has multiple emission devices (LEDs), which can be made to emit many different colors, therefore there are a plurality of emission devices of each of the plural colors).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 26, Shannon does not disclose the pixel of claim 19, wherein said emission devices make electrical contact through pins that extend from the frame.

Yoksza discloses the pixel of claim 19, wherein said emission devices make electrical contact through pins that extend from the frame (Figs 2a, 2b and col. 3, line 65-col. 4, line 16, 23-24; as can be seen from the drawings, the emission devices make electrical contact through pins (electrical jack 42) that extend from the frame (LED module)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of

Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 27, Shannon does not disclose the pixel of claim 19, wherein said emission devices make electrical contact through their respective frames.

Yoksza discloses the pixel of claim 19, wherein said emission devices make electrical contact through their respective frames (Figs 2a, 2b and col. 3, line 65-col. 4, line 16, 23-24; as can be seen from the drawings, the emission devices make electrical contact through pins (electrical jack 42) that extend from the frame (LED module), since the pins (electrical jack 42) are part of the frame (LED module) the emission device also makes electrical contact through their respective frames).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 32, it recites similar limitations to that of claim 1 and is rejected for the same reasons.

In regards to claim 33, Shannon does not disclose the pixel according to claim 32, further comprising a printed circuit board held in said frame, said printed circuit board electrically connecting said emission device and said emission sensor.

Yoksza discloses the pixel according to claim 32, further comprising a printed circuit board held in said frame, said printed circuit board electrically connecting said

emission device and said emission sensor (Figs. 2a-2b and col. 4, lines 52-58; as seen from the drawings, printed circuit board (LED driver board 44) is held in said frame and electrically connects emission device (LEDs) and emission sensor (sensors 136, 140 and 144 of Shannon)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 34, the pixel according to claim 32, Shannon does not disclose wherein said emission device is of an arbitrary color of a color scheme and serves to replace a pixel of said arbitrary color or another color of said color scheme.

Yoksza discloses wherein said emission device is of an arbitrary color of a color scheme (col. 2, lines 62-67; since the emission device (LEDs) can be made to emit many different colors, the emission device can be an arbitrary color of a color scheme) and serves to replace a pixel of said arbitrary color or another color of said color scheme (col. 1, lines 40-48; the pixels (LED module) can be easily replaced and since it is replaceable any arbitrary color of the color scheme can be chosen to replace the pixel).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of

Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 35, it recites limitations similar to that of claim 11 and is rejected for the same reasons.

5. Claims 6-7, 21 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al in view of Yoksza et al in further view of Mertz et al (US 6,295,039).

In regards to claim 6, Shannon and Yoksza do not disclose the pixel according to claim 5, wherein said each of said plurality of filters comprises a polarization filter, and each of said plurality of respective emission sensors is responsive to a different band of polarization phases.

Mertz discloses the pixel according to claim 5, wherein said each of said plurality of filters comprises a polarization filter (col. 4, lines 1-2; by incorporating the polarization filter into the filters of Shannon and Yoksza, the plurality of filters would comprise polarization filters), and each of said plurality of respective emission sensors is responsive to a different band of polarization phases (col. 4, lines 1-6; the polarization filters filter the vertical component, by rotating the polarization filter different bands would be passed through the different polarization filters.).

It would have been obvious at the time of invention to modify Shannon and Yoksza with the teachings of Mertz, polarization filter, by incorporating the polarization filter of Mertz into the filter of Shannon and Yoksza because it ensures the intended light will pass through the filter (col. 4, lines 10-18).

In regards to claim 7, Shannon does not disclose the pixel according to claim 6, further comprising a printed circuit board held in said frame, said printed circuit board electrically connecting said plurality of emission devices and said plurality of respective emission sensors.

Yoksza discloses the pixel according to claim 6, further comprising a printed circuit board held in said frame, said printed circuit board electrically connecting said plurality of emission devices and said plurality of respective emission sensors (Figs. 2a-2b and col. 4, lines 52-58; as seen from the drawings, printed circuit board (LED driver board 44) is held in said frame and electrically connects emission device (LEDs) and emission sensor (sensors 136, 140 and 144 of Shannon)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 21, Shannon and Yoksza do not disclose the pixel of claim 20, wherein each of said filters comprises a polarization filter, each being physically identical but rotationally positioned to be pass a band of polarized emissions different from that of filters corresponding to others of the plural colors.

Mertz discloses the pixel of claim 20, wherein each of said filters comprises a polarization filter (Figure 5, 201), each being physically identical but rotationally positioned to be pass a band of polarized emissions different from that of filters

corresponding to others of the plural colors (col. 4, lines 1-6; since the polarization filter passes vertical component, by using this same filter and applying it to each filter of Shannon and Yoksza, but rotating each filter to different positions, the filters would be rotationally positioned to pass a band of polarized emissions different from filters corresponding to others or plural colors).

It would have been obvious at the time of invention to modify Shannon and Yoksza with the teachings of Mertz, polarization filter, by incorporating the polarization filter of Mertz into the filter of Shannon and Yoksza because it ensures the intended light will pass through the filter (col. 4, lines 10-18).

In regards to claims 28, Shannon does not disclose a method of producing display from a pixel in an optically addressed pixel array, the method comprising the steps of:

selectively positioning an optically addressed pixel capable of displaying multiple colors to receive a specific phase of a polarized emission and accordingly display only one of the multiple colors;

inserting said pixel into a receptacle array in the position determined in said step of selectively positioning; and

supplying power to said pixel.

Yoksza discloses a method of producing display from a pixel in an optically addressed pixel array, the method comprising the steps of:

selectively positioning an optically addressed pixel capable of displaying multiple colors to receive a specific phase of a polarized emission (Fig. 3b; as can be seen from

the drawing the pixels (LED module) have been selectively positioned in the same manner and receive the phase of polarized emission) and accordingly display only one of the multiple colors (Fig. 3b; as can be seen from the drawing the pixels (LED module) have been selectively positioned in the same manner and receive the phase of polarized emission, therefore each pixel displays the same color);

inserting said pixel into a receptacle array in the position determined in said step of selectively positioning (col. 1, lines 40-48; since the pixel (LED module) is replaceable, it is inherent that it would need to be inserted into the receptacle array); and

supplying power to said pixel (col. 3, line 65-col. 4, line 16; power is supplied via the receptacle array to the pixel (power is supplied from the ribbon cable to the LED module via electrical jack)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 29, Shannon does not disclose the method of claim 28, wherein the step of supplying power supplies power through the receptacle array.

Yoksza discloses the method of claim 28, wherein the step of supplying power supplies power through the receptacle array (col. 3, line 65-col. 4, line 16; power is

supplied via the receptacle array to the pixel (power is supplied from the ribbon cable to the LED module via electrical jack)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 30, Shannon does not disclose the method of claim 28, carried out to replace a pixel in the optically addressed pixel array.

Yoksza discloses the method of claim 28, carried out to replace a pixel in the optically addressed pixel array (col. 1, lines 40-48; pixel (LED module) is replaceable).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

6. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al in view of Yoksza et al in view of Mertz et al in further view of Liu et al (US 5,572,037).

In regards to claim 8, Shannon and Yoksza disclose the pixel according to claim 1, comprising a plurality of respective emission sensors and emission devices held in said frame.

Shannon and Yoksza do not disclose wherein said filter comprises a polarization filter, the pixel further comprising: a rotatable cap connected to said frame, said polarization filter being held by said cap and wherein a rotational position of said cap determines which one or more of said plurality of respective emission sensors may receive emissions of a proper band to activate emission devices of a respective single color.

Mertz discloses wherein said filter comprises a polarization filter (col. 4, lines 1-2).

It would have been obvious at the time of invention to modify Shannon and Yoksza with the teachings of Mertz, filter comprising a polarization filter, by incorporating the filter of Mertz into the filter of Shannon and Yoksza because it ensures the intended light will pass through the filter (col. 4, lines 10-18).

Shannon, Yoksza and Mertz do not disclose the pixel further comprising: a rotatable cap connected to said frame, said polarization filter being held by said cap and wherein a rotational position of said cap determines which one or more of said plurality of respective emission sensors may receive emissions of a proper band to activate emission devices of a respective single color.

Liu discloses the pixel further comprising: a rotatable cap (rotating filter wheel 28) connected to said frame (col. 3, lines 61-62; even though the rotatable cap is made of X-ray attenuating material, Liu is referenced to show a rotatable cap wherein the rotational position determines which pixel a sub-beam is directed to), said polarization filter being held by said cap (col. 3, lines 61-62; the rotating cap (rotating filter wheel) is

made of X-ray attenuating material, however it is just referred to for it's shape, having an opening and when combined with Shannon, Yoksza and Mertz operates as claimed) and wherein a rotational position of said cap determines which one or more of said plurality of respective emission sensors may receive emissions of a proper band to activate emission devices of a respective single color (col. 3, lines 61-62; since there is an opening, which rotates changing the rotational position sub-beam is directed, therefore the rotational position of the rotatable cap determines which emission sensors receive emissions).

It would have been obvious at the time of invention to modify Shannon, Yoksza and Mertz with the teachings of Liu, rotatable cap, polarization filter held by rotatable cap and rotational position determining which emission devices receive emissions, by incorporating the rotatable wheel into the filter of Shannon, Yoksza and Mertz because it allows the light to be directed to its intended pixel or region.

In regards to claim 9, Shannon, Yoksza and Mertz do not disclose the pixel according to claim 8, further comprising blacked out portions on said polarization filter to align with all emissions sensors corresponding to all but one or more of said plurality of emission sensors based upon the rotational position of said cap.

Liu discloses the pixel according to claim 8, further comprising blacked out portions on said polarization filter to align with all emissions sensors corresponding to all but one or more of said plurality of emission sensors based upon the rotational position of said cap (Fig. 1, 26 and 28; by virtue of having an opening (26) which the X-ray beam is able to pass through and a region (28) which prevents X-ray beams, the region (28) is

blacked out towards X-rays. By applying this method to the filter of Shannon, Yoksza and Mertz the filter would have a blacked out region to prevent light from passing instead of X-rays and an opening to allow light to pass through instead of X-rays).

It would have been obvious at the time of invention to modify Shannon, Yoksza and Mertz with the teachings of Liu, blacked out portions on rotatable cap (polarization filter), by incorporating the rotatable cap of Liu into the filter of Shannon, Yoksza and Mertz because it prevents light from passing through the filter in unwanted regions.

In regards to claim 10, Shannon and Yoksza disclose the pixel according to claim 8, with at least one emission sensor in said plurality of emission sensors corresponding to each of a plurality of colors of emission devices in said plurality of emission devices (col. 8, lines 1-12, 31-43; the emission sensor (photodiode) detects light from the emission device (display element)).

Shannon and Yoksza do not disclose the pixel according to claim 8, wherein said plurality of respective emission sensors are polarization sensitive, and wherein emission sensors corresponding to different colors are responsive to different polarization bands, and wherein the rotational position of said cap determines which of said colors are active.

Mertz discloses wherein said plurality of respective emission sensors are polarization sensitive, and wherein emission sensors corresponding to different colors are responsive to different polarization bands (col. 4, lines 1-6; by incorporating the polarization filter into the filter of Shannon and Yoksza, the emission sensors (sensors 136, 140 and 144) become responsive to different polarization bands.).

It would have been obvious at the time of invention to modify Shannon and Yoksza with the teachings of Mertz, filter comprising a polarization filter, by incorporating the filter of Mertz into the filter of Shannon and Yoksza because it ensures the intended light will pass through the filter (col. 4, lines 10-18).

Shannon, Yoksza and Mertz do not disclose wherein the rotational position of said cap determines which of said colors are active.

Liu discloses wherein the rotational position of said cap determines which of said colors are active (col.3, lines 61-62; by incorporating the shape of Liu's filter into the filter of Shannon, Yoksza and Mertz, the position of the filter would determine which filter is allowed to receive and pass light through).

It would have been obvious at the time of invention to modify Shannon, Yoksza and Mertz with the teachings of Liu, blacked out portions on rotatable cap (polarization filter), by incorporating the rotatable cap of Liu into the filter of Shannon, Yoksza and Mertz because it prevents light from passing through the filter in unwanted regions.

7. Claims 12-13 and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al in view of Yoksza et al in further view of Hashimoto (US 7,050,021).

In regards to claim 12, Shannon and Yoksza do not disclose the receptacle array of claim 11, wherein said frame and said receptacles are hexagon shaped.

Hashimoto discloses the receptacle array of claim 11, wherein said frame and said receptacles are hexagon shaped (Figs. 2-3; as can be seen from the drawings the receptacles are formed into a hexagon shape by partition 29).

It would have been obvious at the time of invention to modify Shannon and Yoksza with the teachings of Hashimoto, hexagon shaped receptacle array, by incorporating the hexagon shaped receptacle array of Hashimoto with the receptacle array of Shannon and Yoksza because it provides a solid structure that is more resilient to damage.

In regards to claim 13, Shannon and Yoksza do not disclose the receptacle array of claim 11, wherein said plurality of receptacles are shaped to configure said receptacle array in a honeycomb shape.

Hashimoto discloses the receptacle array of claim 11, wherein said plurality of receptacles are shaped to configure said receptacle array in a honeycomb shape (Figs. 2-3; as can be seen from the drawings the plurality of receptacles are formed to configure the receptacle array into a honeycomb shape by partition 29).

It would have been obvious at the time of invention to modify Shannon and Yoksza with the teachings of Hashimoto, honeycomb shaped receptacle array, by incorporating the honeycomb shaped receptacle array of Hashimoto with the receptacle array of Shannon and Yoksza because it provides a solid structure that is more resilient to damage.

In regards to claim 36, it recites limitations similar to that of claim 12 and is rejected for the same reasons.

In regards to claim 37, it recites limitations similar to that of claim 13 and is rejected for the same reasons.

8. Claims 14 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al in view of Yoksza et al in further view of Touw (US 3,859,553).

In regards to claim 14, Shannon and Yoksza do not disclose the receptacle array of claim 11, wherein said receptacles are formed from rows of conductors, with insulation disposed between alternating ones of the conductors.

Touw discloses the receptacle array of claim 11, wherein said receptacles are formed from rows of conductors, with insulation disposed between alternating ones of the conductors (Figs. 3 and 8; as can be seen from the drawings, there are rows of conductors (29, 30), which when incorporated into the receptacle array of Shannon and Yoksza would create a receptacle area formed from rows of conductors. It would be obvious to provide insulation between said rows, otherwise there could be crosstalk between the rows).

It would have been obvious at the time of invention to modify Shannon and Yoksza with the teachings of Touw, rows of conductors with insulation between alternating ones of the conductors, by incorporating the rows of conductors of Touw into the receptacle array of Shannon and Yoksza because it allows even distribution of signals and power to all pixels.

In regards to claim 38, it recites limitations similar to that of claim 14 and is rejected for the same reasons.

In regards to claim 39, Shannon does not disclose the receptacle array of claim 38, further comprising at least one capacitive element inserted into at least one of said plurality of receptacles.

Yoksza discloses the receptacle array of claim 38, further comprising at least one capacitive element inserted into at least one of said plurality of receptacles (col. 2, lines 62-67; the emission devices (LEDs) themselves act as capacitive elements, therefore at least one capacitive element would be inserted into one of said plurality of receptacles).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

9. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al in view of Yoksza et al in view of Mertz et al in further view of Havel (US 6,577,287).

In regards to claim 15, Shannon discloses said pixels are part of an optically addressed display device including: an emission source (col. 7, lines 56-65) and optics defining multiple color channels and said filter comprising filtering to make commonly colored LEDs responsive to different emissions than other sets of commonly colored LEDs (col. 8, lines 1-12).

Shannon does not disclose an optically addressed display device, comprising a receptacle array of claim 11, wherein said pixel is one of many pixels in said receptacle array, and each said pixel includes at least three LEDs of different colors as emission devices, and said pixels are part of an optically addressed display device including: emissions of multiple polarization states; and a data encoder that applies data, on a

pixel-by-pixel and channel-by-channel basis to said emissions by permitting emissions to reach a pixel indicated to be on by the data.

Yoksza discloses an optically addressed display device, comprising a receptacle array of claim 11, wherein said pixel is one of many pixels in said receptacle array (Fig. 3b; as can be seen from the drawing, there are multiple pixels (LED module) in said receptacle array), and each said pixel includes at least three LEDs of different colors as emission devices (Fig. 3b and col. 2, lines 62-67; as can be seen from the drawing, each pixel (LED module) contains more than three emission devices (LEDs), which can be made to emit many different colors, therefore each pixel (LED module) includes at least three emission devices (LEDs) of different colors).

Shannon and Yoksza do not disclose said pixels are part of an optically addressed display device including: emissions of multiple polarization states; and a data encoder that applies data, on a pixel-by-pixel and channel-by-channel basis to said emissions by permitting emissions to reach a pixel indicated to be on by the data.

Mertz discloses said pixels are part of an optically addressed display device including: emissions of multiple polarization states (col. 4, lines 1-6; by incorporating the polarization filter of into the filter of Shannon, emissions of multiple polarization states can be created).

Shannon, Yoksza and Mertz do not disclose a data encoder that applies data, on a pixel-by-pixel and channel-by-channel basis to said emissions by permitting emissions to reach a pixel indicated to be on by the data.

Havel discloses a data encoder that applies data, on a pixel-by-pixel and channel-by-channel basis to said emissions by permitting emissions to reach a pixel indicated to be on by the data (Fig. 1 and col. 7, lines 25-31; the signals (digital data) generated by the emission sensors of Shannon would send said signal (digital data) to the decoder of Havel, which would then decode the signal (digital data) into a display code).

It would have been obvious at the time of invention to modify Shannon, Yoksza and Mertz with the teachings of Havel, seven-segment decoder, by incorporating the decoder of Havel into the device of Shannon, Yoksza and Mertz because it controls the pixels so that an image can be displayed.

In regards to claim 16, Shannon does not disclose the display device of claim 15, wherein said LEDs are powered through an electrical contact between said receptacles and respective frames of said pixels.

Yoksza discloses the display device of claim 15, wherein said LEDs are powered through an electrical contact between said receptacles and respective frames of said pixels (col. 3, line 65-col. 4, line 16; power is supplied to the frame (LED module) through electrical contact with the receptacle (electrical jack 42 connects to receptacle array)).

It would have been obvious at the time of invention to modify Shannon with the teachings of Yoksza, frame insertable into a receptacle array with a plurality of emission devices for each of the plural colors, by incorporating the emission sensor and filter of

Shannon into the device of Yoksza because it allows the module to be easily replaced without access to the rear of the display (col. 1, lines 42-43 and 47-48).

In regards to claim 17, Shannon discloses the display device of claim 16, wherein said filter comprises a set of color filters to make commonly colored LEDs responsive to different emissions than other sets of commonly colored LEDs (col. 8, lines 1-12).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al in view of Yoksza et al in view of Mertz et al in view of Havel in further view of Touw.

In regards to claim 18, it recites limitations similar to that of claim 14 and is rejected for the same reasons.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon et al in view of Mertz et al.

In regards to claim 31, Shannon discloses a pixel for an optically addressed display, comprising: means for producing displays of a plurality of colors (col. 7, lines 56-65); sensor means for each of the plurality of colors (col. 8, lines 1-12) to activate said means for producing in response to received emissions (col. 8, lines 31-43).

Shannon does not disclose means for making each of said sensor means responsive to emissions of a different polarization band.

Mertz discloses means for making each of said sensor means responsive to emissions of a different polarization band (col. 4, lines 1-2; by incorporating the polarization filter of Mertz into the filters of Shannon, each sensor means becomes responsive to emissions of a different polarization band).

It would have been obvious at the time of invention to modify Shannon with the teachings of Mertz, polarization filter, by incorporating the polarization filter of Mertz into the filters of Shannon because it ensures the intended light will pass through the filter (col. 4, lines 10-18).

Response to Arguments

12. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Pervan whose telephone number is (571) 272-0910. The examiner can normally be reached on Monday - Friday between 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVP
May 24, 2007

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SUPERVISORY PATENT EXAMINER